



Report No.: BLC2009007E-A

LM-79-08 Test Report

For

LEDVANCE LLC

(Brand Name: SYLVANIA)

200 Ballardvale St. Wilmington, MA 01887 USA

LED Corn Lamp

Model name(s): LED12HIDRSC2MED

Representative (Tested) Model:
LED12HIDRSC2MED(3000K)
LED12HIDRSC2MED(4000K)
LED12HIDRSC2MED(5000K)

Model Different: All construction and rating are the same, except CCT

Test & Report By:

Grace Li

Engineer: Grace Li

Date: 2020-09-11

Review By:


Jason Luo

Manager: Jason Luo



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1.1 Product Information:

Organization Name	LEDVANCE LLC	
Brand Name	SYLVANIA	
Model Number	LED12HIDRSC2MED	
SKU (if available)	N/A	
Type of Product (for integral lamps, list base type and lamp type)	LED Corn Lamp	
Rated Voltage / Frequency	100-277Vac, 50/60 Hz	
Nominal Power	12W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K, 4000K, 5000K	
LED Manufacturer	Lumileds	
LED Model	L128-XX80RA35000H1	
Sample Number	BLC2009007E-A1(3000K), A2(4000K), A3(5000K)	
Luminaire Aperture (for downlights)	--	in. mm mm s
Luminaire Length	--	
Luminaires Width	--	
Number of Units (modular products)	N/A	
Photo		
		



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1.2 Test Specifications:

Date of Receipt	2020-09-07
Date of Test	2020-09-11
Test item	<ol style="list-style-type: none">1. Total Luminous Flux2. Luminous Distribution Intensity3. Luminous Efficacy4. Correlated Color Temperature5. Color Rendering Index6. Chromaticity Coordinate7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none">1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources4. CIE 15-2004 Technical Report Colorimetry5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	BL-QP-033

1.3 Test Methods

1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals.

2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.



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2.1 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2020-09-11	Test Ambient:	25.6 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED12HIDRSC2MED(3000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200900	120.1	60	0.096	11.37	0.984	13.21
7E-A1	277.1	60	0.046	11.68	0.906	9.94
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	1
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	2906	R3	94	R11	79
Duv	-0.0011	R4	79	R12	73
Chromaticity (x, y)	x=0.4420 y=0.4029	R5	81	R13	83
Chromaticity (u', v')	u(u')=0.2544 v'=0.5217	R6	91	R14	97
Color Rendering Index (CRI)	81	R7	79	R15	72
R9	1	R8	54	--	--
Rf	84				
Rg	95				
Rcs,h1(%)	-12				

Photometric Measurement – Goniophotometer Method:

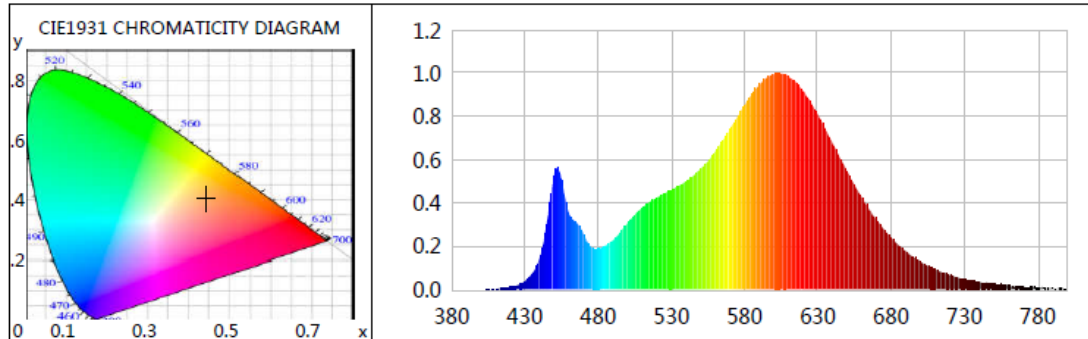
Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	1692.7	1678.4
Luminous Efficacy (lm/W)	148.87	143.70
Most worst Luminous/Highest	143.7	
Beam Angle (°)	--	--
Center Beam Candle Power (cd)	86	--



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Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0050	525	0.4435	15.9409	670	0.3217	11.5626
385	0.0008	0.0274	530	0.4583	16.4740	675	0.2768	9.9496
390	0.0009	0.0330	535	0.4772	17.1543	680	0.2398	8.6183
395	0.0008	0.0290	540	0.4980	17.9025	685	0.2049	7.3639
400	0.0013	0.0469	545	0.5240	18.8342	690	0.1757	6.3173
405	0.0013	0.0481	550	0.5569	20.0196	695	0.1492	5.3630
410	0.0010	0.0346	555	0.5929	21.3119	700	0.1266	4.5495
415	0.0041	0.1481	560	0.6381	22.9381	705	0.1088	3.9106
420	0.0104	0.3756	565	0.6882	24.7385	710	0.0922	3.3146
425	0.0193	0.6933	570	0.7413	26.6481	715	0.0770	2.7670
430	0.0374	1.3428	575	0.7978	28.6794	720	0.0656	2.3592
435	0.0734	2.6375	580	0.8526	30.6477	725	0.0561	2.0175
440	0.1415	5.0873	585	0.9027	32.4505	730	0.0485	1.7424
445	0.3061	11.0030	590	0.9480	34.0766	735	0.0378	1.3588
450	0.5324	19.1372	595	0.9795	35.2098	740	0.0352	1.2657
455	0.5085	18.2782	600	0.9961	35.8079	745	0.0324	1.1653
460	0.3531	12.6911	605	1.0000	35.9464	750	0.0253	0.9110
465	0.3096	11.1275	610	0.9833	35.3453	755	0.0233	0.8390
470	0.2556	9.1880	615	0.9567	34.3887	760	0.0190	0.6836
475	0.1958	7.0385	620	0.9166	32.9489	765	0.0136	0.4888
480	0.1874	6.7376	625	0.8661	31.1326	770	0.0146	0.5254
485	0.2028	7.2912	630	0.8076	29.0293	775	0.0109	0.3922
490	0.2265	8.1424	635	0.7417	26.6602	780	0.0056	0.2002
495	0.2625	9.4363	640	0.6757	24.2876	785	0.0035	0.1244
500	0.3058	10.9917	645	0.6065	21.8022	790	0.0108	0.3877
505	0.3436	12.3512	650	0.5449	19.5858	795	0.0047	0.1686
510	0.3780	13.5893	655	0.4820	17.3260	800	0.0033	0.1169
515	0.4029	14.4819	660	0.4236	15.2266			
520	0.4240	15.2421	665	0.3692	13.2718			



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TM30

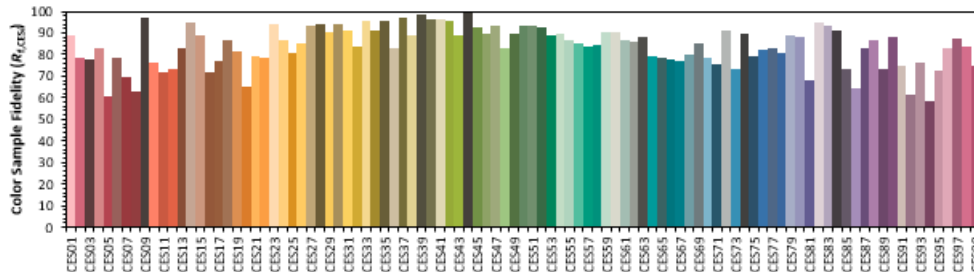
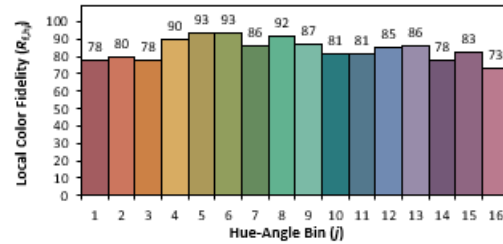
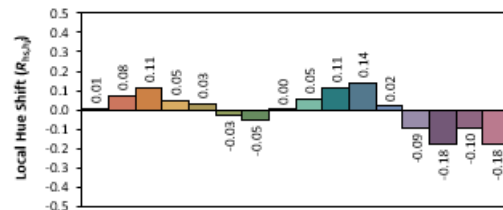
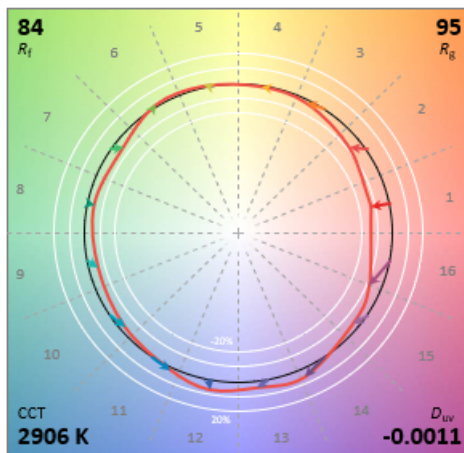
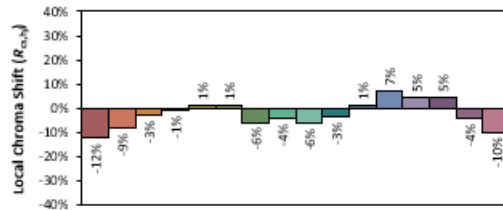
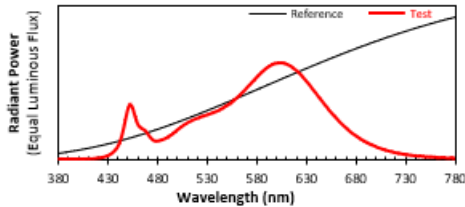
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-3080RA35000H1

Manufacturer: ASMAIT LIGHT CO., LTD

Date: 2020/9/11

Model: LED12HIDRSC2MED (3000K)



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4420

y 0.4029

u' 0.2544

v' 0.5217

CIE 13.3-1995
(CRI)

R_a 81

R_g 0

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



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Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	92.0	5.4%	5.4%
0-40	180.2	10.6%	10.6%
0-60	453.4	26.8%	26.8%
60-90	511.8	30.2%	30.2%
70-100	518.5	30.6%	30.6%
90-120	470.8	27.8%	27.8%
0-90	965.2	57%	57%
90-180	727.6	43%	43%
0-180	1,692.8	100%	100%

Lumens Per Zone

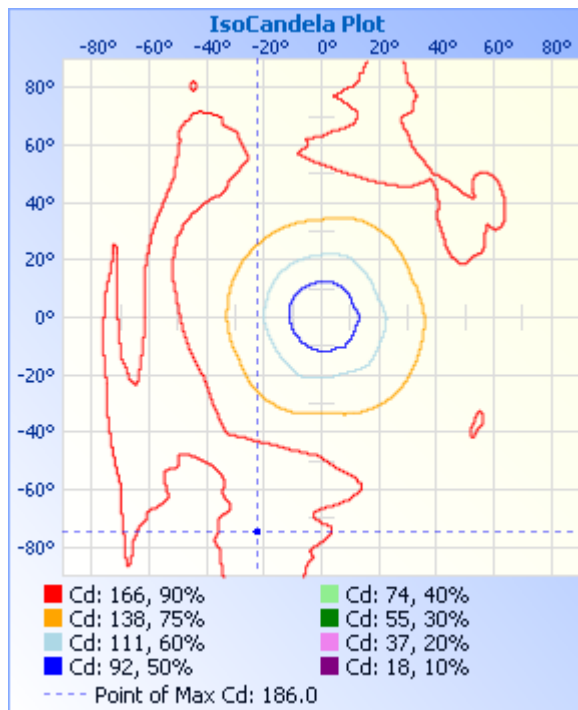
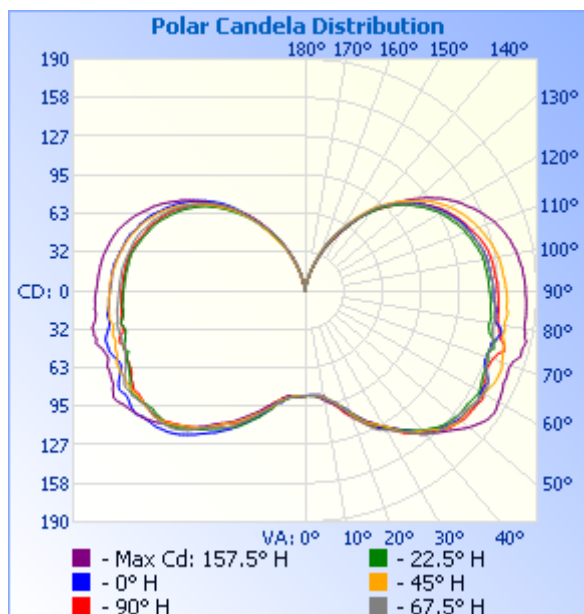
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	8.4	0.5%	90-100	171.4	10.1%
10-20	28.0	1.7%	100-110	160.2	9.5%
20-30	55.6	3.3%	110-120	139.2	8.2%
30-40	88.2	5.2%	120-130	110.7	6.5%
40-50	123.0	7.3%	130-140	77.5	4.6%
50-60	150.2	8.9%	140-150	44.7	2.6%
60-70	164.7	9.7%	150-160	19.2	1.1%
70-80	172.5	10.2%	160-170	4.4	0.3%
80-90	174.6	10.3%	170-180	0.2	0%



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Photometric Data





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Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86
1	86	86	86	86	86	87	86	86	86	86	86	87	87	86	87	86	86
2	86	86	86	86	86	87	86	86	86	86	86	87	87	86	87	87	86
3	86	87	86	86	86	87	87	86	87	87	86	87	87	86	87	87	86
4	86	86	86	87	86	88	87	86	87	87	86	87	87	87	87	87	86
5	86	87	86	87	87	88	87	87	87	87	86	87	87	87	87	87	86
6	86	87	86	87	87	88	87	87	87	87	87	88	87	87	87	86	86
7	86	87	87	87	88	88	88	88	87	88	87	88	87	87	87	87	86
8	86	88	87	88	88	89	89	89	88	89	89	88	87	88	88	87	86
9	87	89	88	89	89	90	90	90	90	89	89	89	88	89	88	88	87
10	88	90	89	90	90	91	91	91	90	90	90	90	89	90	89	88	88
11	90	91	90	91	91	92	93	92	92	92	92	91	90	92	90	90	90
12	92	92	91	92	93	94	93	94	94	93	92	93	90	92	92	91	92
13	93	92	93	93	94	96	95	94	94	94	92	94	93	94	93	92	93
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16	97	98	97	99	100	102	101	99	100	102	99	99	96	101	98	97	97
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Guangzhou, People's Republic of China. info@bellingtest.com

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2.2 Electrical, Photometric and Chromaticity Measurements*(Refer to Work Instruction BL-QP-033)*

Test date	2020-09-11	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED12HIDRSC2MED(4000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200900	120.1	60	0.094	11.14	0.984	13.52
7E-A2	277.1	60	0.046	11.52	0.902	10.12
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	84	R9	13
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	3758	R3	96	R11	82
Duv	-0.0017	R4	83	R12	65
Chromaticity (x, y)	x=0.3903 y=0.3791	R5	84	R13	86
Chromaticity (u', v')	u(u')=0.2307 v'=0.5041	R6	89	R14	99
Color Rendering Index (CRI)	84	R7	84	R15	77
R9	13	R8	64	--	--
Rf	84				
Rg	95				
Rcs,h1(%)	-12				

Photometric Measurement – Goniophotometer Method:

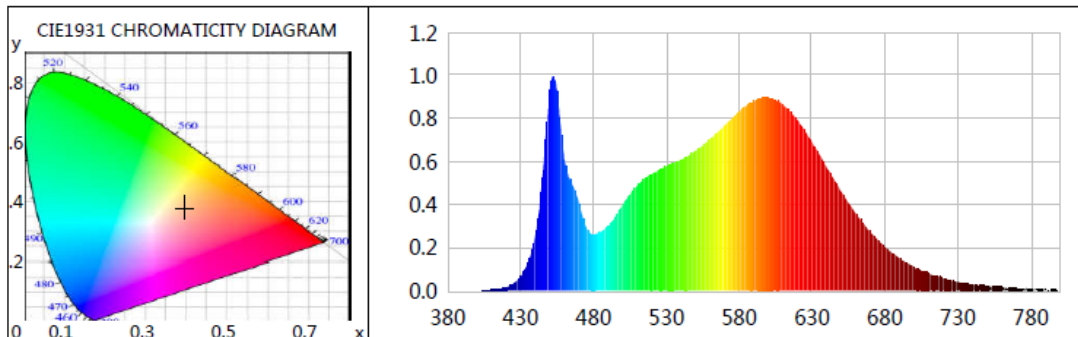
Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	1796.7	1771.3
Luminous Efficacy (lm/W)	161.28	153.76
Most worst Luminous/Highest Watts	153.76	



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Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0000	0.0013	525	0.5596	19.9431	670	0.2723	9.7057
385	0.0013	0.0459	530	0.5768	20.5571	675	0.2350	8.3766
390	0.0010	0.0366	535	0.5892	20.9979	680	0.2021	7.2012
395	0.0011	0.0409	540	0.6069	21.6278	685	0.1733	6.1774
400	0.0011	0.0399	545	0.6257	22.2986	690	0.1503	5.3578
405	0.0020	0.0714	550	0.6486	23.1151	695	0.1274	4.5407
410	0.0025	0.0884	555	0.6738	24.0129	700	0.1079	3.8439
415	0.0065	0.2326	560	0.7026	25.0405	705	0.0929	3.3098
420	0.0163	0.5816	565	0.7361	26.2338	710	0.0783	2.7923
425	0.0319	1.1362	570	0.7673	27.3448	715	0.0658	2.3466
430	0.0659	2.3475	575	0.8004	28.5273	720	0.0554	1.9738
435	0.1289	4.5939	580	0.8316	29.6383	725	0.0481	1.7156
440	0.2498	8.9034	585	0.8586	30.6001	730	0.0428	1.5239
445	0.5267	18.7707	590	0.8800	31.3617	735	0.0325	1.1573
450	0.9313	33.1907	595	0.8930	31.8265	740	0.0313	1.1143
455	0.9261	33.0050	600	0.8961	31.9373	745	0.0291	1.0360
460	0.6150	21.9195	605	0.8841	31.5086	750	0.0217	0.7724
465	0.5010	17.8557	610	0.8641	30.7966	755	0.0217	0.7734
470	0.4057	14.4573	615	0.8328	29.6796	760	0.0174	0.6188
475	0.2941	10.4829	620	0.7916	28.2106	765	0.0123	0.4384
480	0.2614	9.3169	625	0.7433	26.4904	770	0.0129	0.4601
485	0.2737	9.7528	630	0.6882	24.5286	775	0.0087	0.3117
490	0.2985	10.6396	635	0.6329	22.5565	780	0.0066	0.2342
495	0.3420	12.1902	640	0.5733	20.4313	785	0.0038	0.1337
500	0.3964	14.1260	645	0.5168	18.4176	790	0.0111	0.3940
505	0.4443	15.8362	650	0.4598	16.3855	795	0.0048	0.1714
510	0.4875	17.3756	655	0.4071	14.5090	800	0.0012	0.0429
515	0.5190	18.4963	660	0.3570	12.7231			
520	0.5402	19.2525	665	0.3130	11.1566			



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TM30

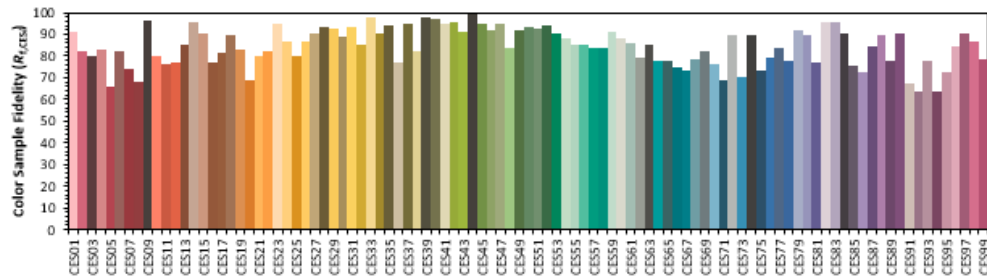
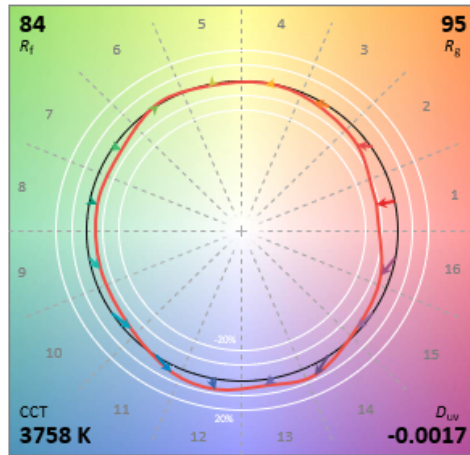
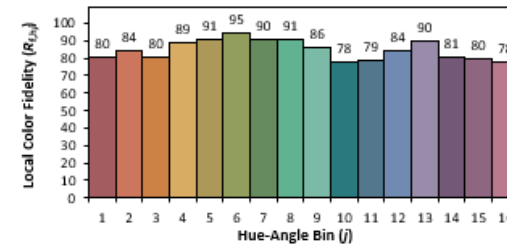
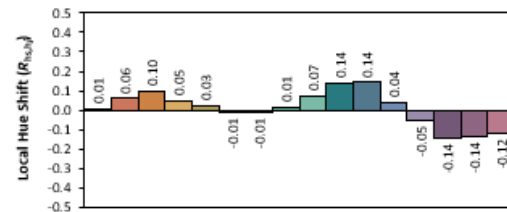
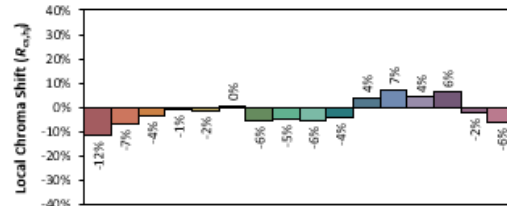
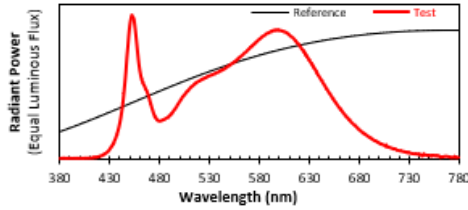
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-4080RA35000H1

Manufacturer: ASMART LIGHT CO., LTD

Date: 2020/9/11

Model: LED12HIDRSC2MED(4000K)



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3903

y 0.3791

u' 0.2307

v' 0.5041

CIE 13.3-1995
(CRI)

R_2 84

R_3 13

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



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Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	97.1	5.4%	5.4%
0-40	189.6	10.6%	10.6%
0-60	481.3	26.8%	26.8%
60-90	545.7	30.4%	30.4%
70-100	547.9	30.5%	30.5%
90-120	496.6	27.6%	27.6%
0-90	1,027.0	57.2%	57.2%
90-180	769.8	42.8%	42.8%
0-180	1,796.8	100%	100%

Lumens Per Zone

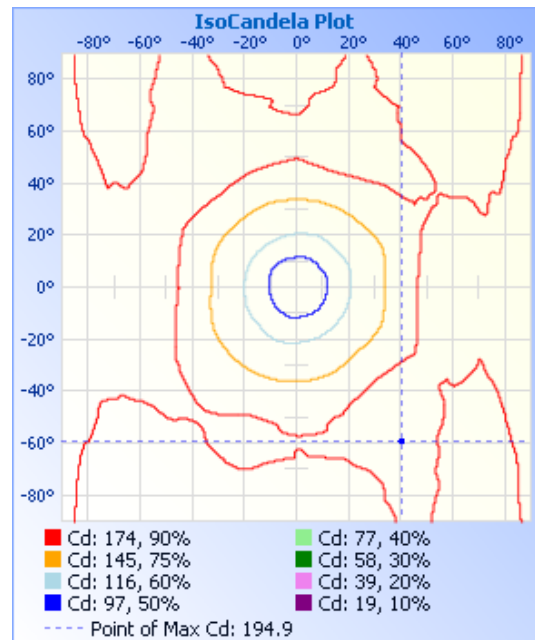
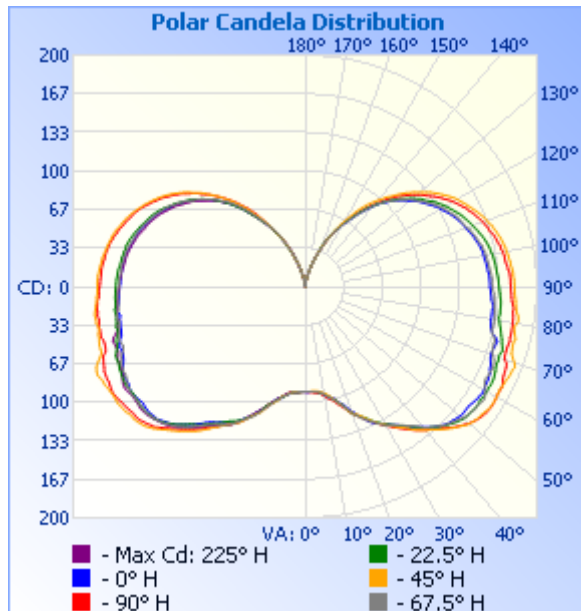
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	8.8	0.5%	90-100	180.6	10.1%
10-20	29.6	1.6%	100-110	168.9	9.4%
20-30	58.7	3.3%	110-120	147.1	8.2%
30-40	92.5	5.1%	120-130	117.3	6.5%
40-50	130.6	7.3%	130-140	82.4	4.6%
50-60	161.1	9.0%	140-150	47.6	2.7%
60-70	178.4	9.9%	150-160	20.7	1.2%
70-80	183.0	10.2%	160-170	5.0	0.3%
80-90	184.3	10.3%	170-180	0.3	0%



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Photometric Data





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Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
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61	177	181	190	178	190	176	174	179	174	176	191	175	190	174	179	190	177

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62	177	181	190	175	190	177	174	180	174	176	191	175	189	174	178	192	177
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Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01
Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
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Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01

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Guangzhou, People's Republic of China. info@bellingtest.com

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167	12	12	12	12	11	11	11	10	11	11	11	12	12	11	12	12	12
168	10	10	10	10	10	9	9	8	10	10	9	10	9	10	9	10	10
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171	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5
172	4	4	4	4	4	4	4	4	3	4	4	4	3	4	4	4	4
173	3	3	3	3	3	3	3	3	3	3	3	3	2	2	3	3	3
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178	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
179	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01

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Report No.: BLC2009007E-A

2.2 Electrical, Photometric and Chromaticity Measurements*(Refer to Work Instruction BL-QP-033)*

Test date	2020-09-11	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED12HIDRSC2MED(5000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200900	120.1	60	0.096	11.34	0.985	13.15
7E-A3	277.1	60	0.046	11.67	0.906	10.18
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	4
Frequency (Hz)	60	R2	88	R10	72
CCT (K)	4941	R3	94	R11	80
Duv	0.0035	R4	81	R12	54
Chromaticity (x, y)	x=0.3476 y=0.3607	R5	80	R13	82
Chromaticity (u', v')	u(u')=0.2096 v'=0.4894	R6	83	R14	97
Color Rendering Index (CRI)	82	R7	87	R15	74
R9	4	R8	66	--	--
Rf	83				
Rg	95				
Rcs,h1(%)	-13				

Photometric Measurement – Sphere-Spectroradiometer Method:

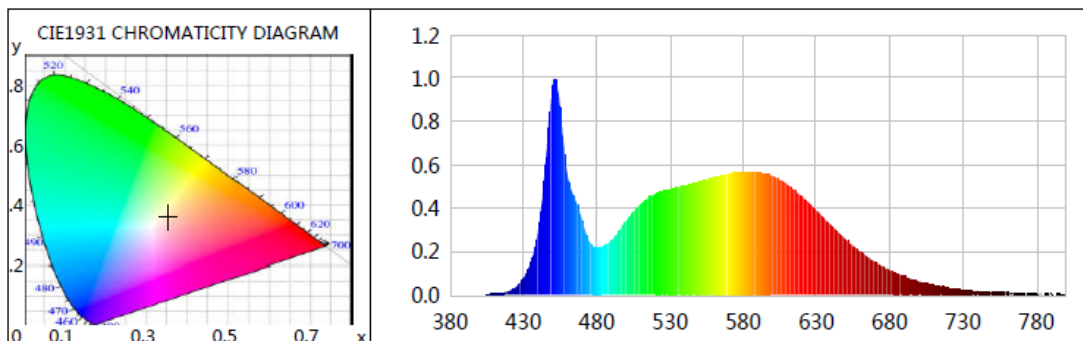
Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	1789.1	1780.2
Luminous Efficacy (lm/W)	157.77	152.54
Most worst Luminous/Highest Watts	152.54	



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Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0004	0.0211	525	0.4780	23.5077	670	0.1523	7.4897
385	0.0005	0.0242	530	0.4864	23.9222	675	0.1316	6.4728
390	0.0005	0.0258	535	0.4938	24.2822	680	0.1136	5.5850
395	0.0011	0.0531	540	0.5041	24.7922	685	0.0973	4.7840
400	0.0008	0.0400	545	0.5104	25.0994	690	0.0853	4.1973
405	0.0014	0.0676	550	0.5215	25.6455	695	0.0715	3.5152
410	0.0031	0.1518	555	0.5300	26.0632	700	0.0614	3.0186
415	0.0074	0.3620	560	0.5424	26.6745	705	0.0521	2.5619
420	0.0183	0.9007	565	0.5505	27.0716	710	0.0445	2.1890
425	0.0371	1.8231	570	0.5573	27.4085	715	0.0366	1.8019
430	0.0761	3.7416	575	0.5640	27.7344	720	0.0323	1.5888
435	0.1498	7.3679	580	0.5687	27.9671	725	0.0273	1.3425
440	0.2906	14.2900	585	0.5683	27.9458	730	0.0231	1.1341
445	0.6012	29.5632	590	0.5664	27.8527	735	0.0187	0.9205
450	0.9705	47.7268	595	0.5608	27.5764	740	0.0190	0.9322
455	0.8641	42.4929	600	0.5476	26.9273	745	0.0171	0.8421
460	0.5550	27.2958	605	0.5313	26.1276	750	0.0128	0.6273
465	0.4455	21.9094	610	0.5100	25.0822	755	0.0128	0.6303
470	0.3422	16.8298	615	0.4834	23.7730	760	0.0107	0.5255
475	0.2452	12.0579	620	0.4559	22.4206	765	0.0087	0.4274
480	0.2192	10.7814	625	0.4210	20.7025	770	0.0084	0.4141
485	0.2282	11.2210	630	0.3887	19.1171	775	0.0061	0.2985
490	0.2499	12.2889	635	0.3552	17.4665	780	0.0037	0.1804
495	0.2907	14.2950	640	0.3205	15.7632	785	0.0010	0.0504
500	0.3390	16.6732	645	0.2875	14.1385	790	0.0080	0.3941
505	0.3836	18.8625	650	0.2555	12.5660	795	0.0026	0.1301
510	0.4186	20.5875	655	0.2246	11.0457	800	0.0020	0.0965
515	0.4467	21.9666	660	0.1990	9.7847			
520	0.4640	22.8206	665	0.1745	8.5799			



Certificate#4810.01

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TM30

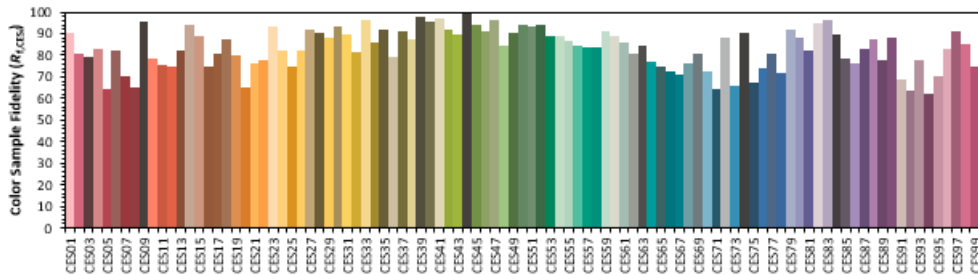
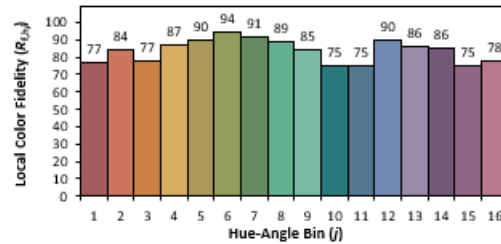
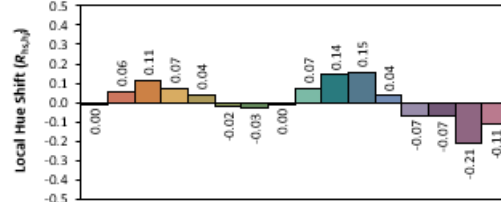
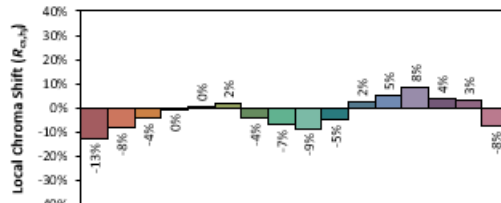
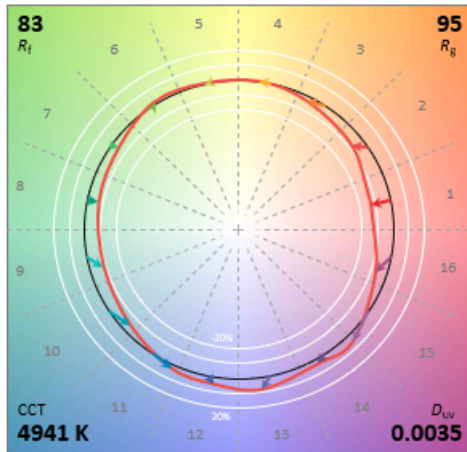
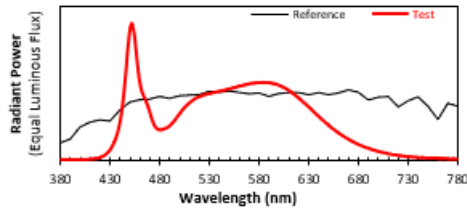
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-5080RA35000H1

Manufacturer: ASMAIT LIGHT CO., LTD

Date: 2020/9/11

Model: LED12HIDRSC2MED(5000K)



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3476
 y 0.3607
 u' 0.2096
 v' 0.4894

CIE 13.3-1995
(CRI)

R_a 82
 R_g 4

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



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Zonal Lumen Tabulation

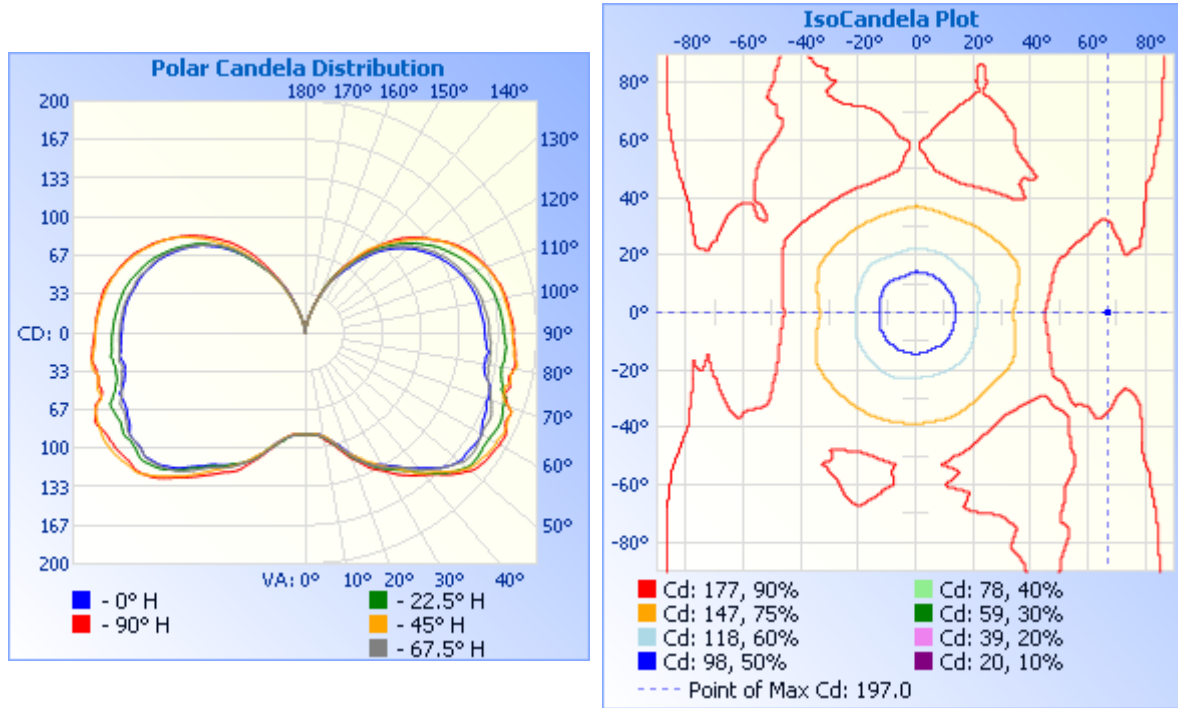
Zonal Lumen Summary				Lumens Per Zone					
Zone	Lumens	% Lamp	% Luminaire	Zone	Lumens	% Total	Zone	Lumens	% Total
0-30	95.1	5.3%	5.3%	0-10	8.5	0.5%	90-100	179.9	10.1%
0-40	185.7	10.4%	10.4%	10-20	28.9	1.6%	100-110	168.4	9.4%
0-60	477.4	26.7%	26.7%	20-30	57.6	3.2%	110-120	146.8	8.2%
60-90	542.1	30.3%	30.3%	30-40	90.6	5.1%	120-130	117.3	6.6%
70-100	543.8	30.4%	30.4%	40-50	130.0	7.3%	130-140	82.8	4.6%
90-120	495.1	27.7%	27.7%	50-60	161.7	9.0%	140-150	48.1	2.7%
0-90	1,019.5	57%	57%	60-70	178.2	10.0%	150-160	20.9	1.2%
90-180	769.7	43%	43%	70-80	180.6	10.1%	160-170	5.0	0.3%
0-180	1,789.2	100%	100%	80-90	183.3	10.2%	170-180	0.3	0%



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Photometric Data





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Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
1	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
2	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
3	88	88	88	88	88	89	88	88	88	88	88	88	88	88	88	88	88
4	88	89	88	88	89	89	89	89	89	89	88	89	88	88	88	88	88
5	88	88	88	89	89	89	89	89	89	89	88	89	88	88	88	88	88
6	88	89	88	89	89	90	89	89	89	89	89	89	88	88	88	88	88
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11	93	94	92	93	95	95	93	95	94	95	93	93	93	93	93	93	93
12	94	95	93	95	96	96	96	95	95	95	94	95	95	94	95	94	94
13	95	97	95	97	98	97	98	96	96	97	96	97	97	96	97	95	95
14	97	99	97	98	99	98	98	98	98	100	98	98	99	98	98	97	97
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16	101	103	102	103	104	103	102	103	103	102	102	103	104	102	103	102	101
17	103	105	104	105	107	104	105	104	105	104	104	105	106	104	105	104	103
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19	108	111	109	110	113	108	110	108	110	110	109	111	112	109	109	109	108
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21	113	116	113	115	118	114	114	112	114	115	113	117	117	113	115	114	113
22	115	119	115	118	119	117	117	114	117	117	116	119	120	115	118	117	115
23	119	120	117	120	122	119	119	116	120	120	118	121	123	117	121	120	119
24	121	122	119	122	125	121	121	119	122	122	121	122	126	119	123	122	121
25	124	124	122	125	128	123	123	121	124	124	124	124	130	122	126	125	124
26	126	127	124	127	131	125	125	124	126	126	126	126	133	124	129	127	126
27	128	130	126	129	132	127	128	126	128	127	128	128	135	126	132	128	128
28	129	132	128	131	134	128	130	127	129	128	130	131	136	128	134	130	129
29	131	134	131	133	136	129	132	129	131	130	132	133	138	129	135	131	131

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31	134	138	135	136	141	132	134	132	134	134	137	136	141	132	138	136	134
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33	137	141	140	139	146	136	137	135	136	138	141	139	146	136	140	141	137
34	139	143	141	140	148	139	138	137	137	139	144	140	148	137	142	143	139
35	142	145	144	142	150	141	140	139	139	141	147	142	151	139	144	146	142
36	144	148	148	144	152	143	142	142	141	143	150	145	153	141	146	149	144
37	146	150	151	147	155	145	144	144	144	146	153	147	156	144	148	151	146
38	149	153	154	149	157	147	147	146	146	148	156	150	158	145	151	154	149
39	151	156	156	151	158	148	150	149	149	150	159	153	161	148	154	156	151
40	153	159	158	155	161	150	153	151	151	153	162	156	163	150	156	159	153
41	155	161	160	157	162	152	156	154	154	156	165	159	166	153	159	161	155
42	158	164	163	159	165	154	159	156	157	159	167	161	169	155	162	164	158
43	160	167	165	161	167	156	161	158	160	162	170	163	172	157	164	166	160
44	163	169	167	163	170	158	163	161	162	165	173	165	175	159	167	169	163
45	165	171	170	166	173	161	165	163	164	168	175	167	178	161	168	171	165
46	167	174	173	168	176	163	167	166	166	170	178	168	180	164	170	174	167
47	169	176	175	169	179	165	169	168	168	172	181	170	182	165	172	176	169
48	171	178	179	171	181	167	170	171	170	173	184	171	184	167	174	178	171
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53	174	183	187	178	190	173	175	180	175	179	191	174	188	171	179	184	174
54	174	184	187	178	191	174	175	180	174	178	192	174	188	171	177	186	174
55	174	183	188	178	191	175	175	180	173	178	193	174	189	170	177	186	174
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58	176	183	190	177	192	176	175	179	175	177	195	175	191	171	177	190	176
59	176	183	190	176	193	176	176	180	175	178	196	175	192	170	179	190	176
60	176	183	190	176	194	176	175	180	175	179	196	175	191	170	179	190	176
61	174	184	190	175	194	175	174	180	173	179	197	175	192	170	177	191	174

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62	173	184	191	175	194	175	171	180	171	178	197	174	192	170	175	191	173
63	172	185	192	175	194	174	170	180	170	178	196	173	193	169	173	191	172
64	171	185	192	176	193	173	168	180	170	177	196	172	193	168	172	190	171
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70	168	182	187	171	186	168	168	176	168	179	192	169	192	167	171	184	168
71	168	182	182	169	184	167	168	173	168	176	189	167	191	165	170	183	168
72	168	182	180	168	182	164	166	171	168	174	185	166	186	164	170	184	168
73	166	179	179	166	180	161	166	170	165	171	184	165	183	162	170	181	166
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75	164	177	179	164	183	158	162	170	162	169	186	164	183	157	168	179	164
76	161	175	182	162	182	158	159	170	161	167	184	163	184	156	166	179	161
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79	157	173	181	160	182	157	157	168	158	166	183	160	183	154	164	176	157
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81	158	173	185	161	184	160	158	169	159	168	186	162	184	155	162	178	158
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84	159	174	181	161	182	160	159	170	160	168	184	161	185	155	163	178	159
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86	157	174	181	160	181	159	158	169	160	167	182	161	184	155	161	178	157
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88	156	173	179	160	180	157	157	168	159	167	181	161	182	154	160	176	156
89	155	172	179	159	179	157	156	168	159	167	181	161	182	153	160	176	155
90	155	171	179	159	180	157	156	168	158	166	181	160	182	153	160	176	155
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92	155	171	179	159	180	157	156	168	158	166	181	160	181	153	160	175	155
93	155	171	178	159	179	157	155	167	158	165	181	159	181	152	159	175	155

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95	153	170	177	158	178	156	155	167	157	164	179	159	180	151	159	174	153
96	153	170	176	157	177	156	154	166	157	164	179	159	180	151	158	173	153
97	152	169	176	157	177	156	154	166	157	164	178	158	179	151	158	173	152
98	152	169	175	156	177	155	153	165	157	163	178	158	179	150	157	174	152
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100	152	167	175	155	176	155	153	165	156	162	177	157	178	150	156	173	152
101	151	167	174	155	175	154	152	164	155	162	176	156	178	149	156	172	151
102	151	166	174	154	175	154	152	163	154	161	176	156	178	149	155	171	151
103	150	165	173	153	174	153	151	163	154	161	175	155	177	149	154	170	150
104	150	164	172	153	174	152	151	162	153	160	174	154	176	148	153	170	150
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106	148	162	170	151	171	150	149	160	151	158	173	153	174	146	151	167	148
107	147	161	169	150	170	150	148	159	151	157	172	152	172	145	151	166	147
108	146	160	168	149	169	149	147	158	150	156	170	151	171	144	150	164	146
109	145	158	167	148	168	148	146	157	149	155	169	151	170	143	149	163	145
110	144	157	166	147	167	147	146	155	148	153	168	149	169	142	148	162	144
111	143	156	164	146	166	146	145	154	147	152	167	148	168	141	146	160	143
112	142	155	163	145	164	145	144	153	146	151	165	147	167	140	146	159	142
113	141	153	161	144	163	144	143	152	145	150	164	146	165	138	145	158	141
114	140	152	160	143	162	143	142	150	144	149	162	145	164	138	144	157	140
115	138	150	158	141	160	141	140	148	143	147	161	144	163	136	142	155	138
116	137	148	156	140	158	140	139	147	142	146	159	143	160	135	141	154	137
117	136	147	155	139	157	139	138	145	140	144	158	142	158	134	140	152	136
118	134	145	153	138	155	138	137	144	139	142	156	140	156	132	138	149	134
119	133	143	151	136	153	136	135	142	137	141	154	139	155	131	136	148	133
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122	128	138	146	131	147	131	130	136	132	136	148	134	149	126	132	143	128
123	126	136	144	130	145	129	128	135	131	134	146	132	147	124	130	141	126
124	125	134	141	128	142	127	127	132	129	132	144	130	144	123	128	139	125
125	123	131	139	126	139	126	125	130	127	130	142	128	142	121	127	136	123

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127	120	127	135	122	135	122	121	125	123	126	137	124	137	118	123	132	120
128	118	125	132	120	133	120	119	122	121	124	134	122	135	116	121	129	118
129	115	123	129	119	130	117	118	119	119	122	132	120	133	113	119	127	115
130	113	120	126	116	128	115	115	117	118	119	128	117	130	111	117	124	113
131	111	118	123	114	125	113	113	114	115	117	125	115	128	109	115	121	111
132	109	115	120	112	123	110	111	112	112	115	122	113	125	107	112	118	109
133	107	113	117	110	120	108	109	109	110	112	119	111	122	105	110	115	107
134	104	110	114	107	118	105	106	106	107	109	116	109	120	102	108	113	104
135	102	107	111	105	115	103	103	103	105	106	112	107	117	99	105	110	102
136	99	105	108	102	111	100	101	100	102	104	109	104	114	97	103	107	99
137	97	102	105	99	108	97	98	98	99	101	106	101	111	94	100	104	97
138	94	99	103	97	104	95	96	95	96	98	103	98	108	92	97	100	94
139	91	96	101	94	101	92	92	92	93	94	99	95	105	89	95	98	91
140	88	93	98	91	97	89	89	89	90	91	96	93	102	87	92	94	88
141	85	90	95	88	94	86	86	86	88	88	92	89	99	84	88	90	85
142	81	86	92	85	90	83	82	83	85	84	89	85	96	81	84	87	81
143	78	83	90	82	87	80	79	79	81	80	85	82	92	78	81	84	78
144	75	79	86	78	83	76	76	76	78	77	82	78	89	75	77	80	75
145	72	77	82	75	80	74	72	73	75	74	78	75	86	72	74	76	72
146	69	73	78	71	77	70	69	69	71	71	74	72	82	69	71	72	69
147	66	70	74	68	74	68	66	65	68	68	70	69	78	66	68	69	66
148	63	68	70	65	71	65	63	62	65	65	66	66	74	63	65	65	63
149	60	66	66	62	68	62	60	59	62	62	63	63	70	60	62	62	60
150	57	63	62	59	64	59	58	56	59	59	59	60	65	56	60	59	57
151	55	60	58	57	61	56	55	52	56	57	56	58	61	53	57	56	55
152	52	57	54	54	58	53	52	49	52	54	52	55	57	50	55	53	52
153	50	54	50	51	54	49	50	47	49	50	49	52	53	47	52	51	50
154	47	51	47	48	51	46	47	44	47	47	46	49	50	45	48	48	47
155	44	48	45	44	48	43	44	42	44	44	43	45	47	42	45	45	44
156	41	44	42	41	45	40	40	40	42	40	40	41	44	39	42	42	41
157	37	41	38	38	41	37	37	37	39	36	37	38	40	37	38	39	37

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159	31	33	31	32	34	31	30	30	33	30	30	32	33	31	32	32	31
160	29	30	28	30	31	29	28	27	30	27	27	29	29	28	29	29	29
161	26	27	25	27	28	26	25	24	26	25	24	27	26	25	26	26	26
162	24	24	23	24	26	24	23	22	23	23	22	24	24	23	24	23	24
163	20	22	21	22	23	21	20	19	20	21	20	22	21	20	21	21	20
164	18	19	18	19	20	18	19	17	19	18	18	19	18	18	19	18	18
165	16	17	16	17	17	16	16	16	17	15	15	16	15	16	16	16	16
166	14	14	14	14	15	14	13	14	14	12	13	14	14	14	14	14	14
167	12	12	12	12	13	12	11	11	11	11	11	12	12	12	12	11	12
168	10	11	10	10	11	10	10	8	10	10	9	10	9	10	10	9	10
169	8	9	9	9	9	8	8	8	8	8	8	9	8	8	8	8	8
170	7	7	7	7	7	7	6	6	6	6	6	6	6	7	7	6	7
171	5	6	6	6	6	5	5	5	5	5	5	5	5	5	5	5	5
172	4	4	4	5	4	4	4	4	4	4	4	4	3	4	4	4	4
173	3	4	3	3	3	3	3	3	3	3	3	3	2	2	3	3	3
174	2	3	3	3	3	2	2	2	2	2	2	2	1	1	2	2	2
175	2	2	2	2	2	1	1	1	2	2	2	1	1	2	1	2	2
176	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
177	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
178	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
179	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1



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3. Test Equipment

Equipment Name	Model No.	Serial No.	Next Calibration Date
Goniophotometric System	GPM-3000	DYHXF120001	2021/2/26
AC Power Source	CHP-500C	N/A	2021/3/29
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2021/3/1
Digital Power Meter	WT500	DYDWQ200006	2021/3/29
Integral Sphere (2M)	2M	DYJCE120067	2021/2/26
Digital Power Meter	WT500	DYDWQ200006	2021/3/29
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2021/2/26
Expand Uncertainty: Photometric Measurement (Sphere): 2.08%, k=2 Chromaticity Measurement(Sphere):25.6K, k=2 Photometric Measurement(Goniophotometer):2.645%, k=2			

******* END OF REPORT *******